

ARTICLE 34

Claims

1. Method for power level control in a display device
having a plurality of display elements corresponding to
the pixels of a picture, wherein a power level mode
selection process is used for increasing the peak white
enhancement factor of the display, [in which the power
value of a video picture is measured and a corresponding
power level mode is selected for controlling the display
contrast,] wherein a picture is divided in a number of
blocks (S_{11} - S_{58}), wherein in each block (S_{11} - S_{58}) the
video levels or values derived from the video levels of
the colour components of the pixels are summed up in
order to determine the local power values (LP) for the
picture,] **characterised in that** a local temperature
estimation is performed for the corresponding blocks of
the display based on said local power values (LP) and
the previously estimated local temperature values,]
[wherein in the estimated local temperature values the
maximum local temperature (MT) in the display is
selected, wherein a further step of maximum power level
limit (PLM) determination is performed based on the
maximum local temperature (MT), and wherein the power
level limit (PLM) is used to restrict the range of
selectable power level modes in the power level mode
selection process to power level modes having a power
level below or equal to said power level limit (PLM).]
2. Method according to claim 1, wherein for local
temperature estimation of a block (S_{11} - S_{58}), the power
dissipation not only of the local block (S_{11} - S_{58}) but
also of a number of neighbouring blocks (S_{11} - S_{58}) is
taken into account.

3. Method according to claim 1 or 2, wherein the maximum local temperature determination for the display is performed once in a number of video frames.
- 5 4. Method according to claim 3, wherein the steps of local power value determination and local temperature estimation are performed only for one or more selected blocks of the whole picture within a frame period.
- 10 5. Method according to claim 3 or 4, wherein a picture is divided in 40 blocks and the maximum local temperature determination is performed once within 40 frame periods.
- 15 6. Method according to one of claims 1 to 5, wherein the switching between maximum allowed power level limits corresponding to the determined maximum local temperature is controlled with a power level mode against picture power curve that falls if the picture power is increasing and that rises if the picture power is decreasing, and with a delay between falling and rising, respectively rising and falling if the change direction of the picture power value changes.
- 20 7. Apparatus for carrying out the method according to one of the previous claims, the apparatus having included a power level determination and selection unit (16, 17), and a local power determination unit (18), wherein for a picture that is divided in a number of blocks (S_{11} - S_{58}), per block (S_{11} - S_{58}) the video levels or values derived from the video levels of the colour components of the pixels are summed up in order to determine the local power values (LP) for the picture, **characterised in that**, said apparatus further includes a local temperature estimator (19), that performs a local temperature estimation per block of the display based on
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said local power values (LP) and the previously
estimated local temperature values, a maximum local
temperature selector (20) that selects the maximum local
temperature from the estimated local temperatures, a
5 maximum power level limit selector (21) that assigns a
maximum power level limit to the selected maximum local
temperature, and a power level limiter (22), wherein the
power level limiter (22) restricts the range of
selectable power level modes in the power level mode
10 selector (21) to power level modes having a power level
below or equal to said selected maximum power level
limit (PLM).

8. Apparatus according to claim 7, wherein it is integrated
15 in a plasma display device.